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GENERAL GEOLOGICAL SECTION OF NEW MEXICO.

ERAS	PERIODS	SUB-P.	SERIES	TERRANES	THICK	ROCKS
CENOZOIC	QUATERNARIC	LATE	*Jornadan*		25	Abode
		MID	*Pdlomasan*		200	Till
		EARLY	*Gilan*		250	Gravels
				Interval		Unconformity
	TERTIARIC	LATE	*Pecosian*	Llano Estacado	300	Sands
				Interval		Unconformity
		MID	*Arriban*	Sante Fe	500	Clays
				Galesteo	800	Sands
				Interval		Unconformity
		EARLY	*Chaman*	Chaco Canyon	1000	Clays
				Largo	700	Sandstones
				Interval		Unconformity
			Nacimientan	Torrejon	300	Marls
				Interval		Unconformity
				Puerco	500	Clays
				Interval		Unconformity
			Aztecan	Archuleta	250	Conglomerate
				Interval		Unconformity
			Ratonan	Maxwell	800	Shales
				Houten	600	Sandstones
				Maya	100	Conglomerate
				Interval		Unconformity
MESOZOIC	CRETACIC	LATE	*Laramian*	Navajo	1000	Shales
				Pictured Cliffs	150	Sandstones
				Interval		Unconformity
			Montanan	Lewis	600	Shales
				Chacra	200	Sandstones
				Mesa Verde	800	Shales
				Pina Vititos	250	Sandstones
				Interval		Unconformity
		MID	*Coloradan*	La Jara	1000	Shales
				Apishapa	500	Shales
				Timpas	300	Limestones
				Gallinas	200	Shales
			Dakotan	Glorietta	300	Sandstones
				Interval		Unconformity
		EARLY	*Comanchan*	Kiowa	100	Shales
				Garrett	50	Conglomerate
				Interval		Unconformity
				Washita	500	Limestones
				Fredericksburg	200	Limestones

Eras	Periods	Sub-p.	Series	Terranes	Thick	Rocks
MESOZOIC	JURASSIC	Late		Interval		Unconformity
		Mid	*Morrisonian*	Chaquaqua	150	Shales
				Travester	100	Shales
				Exter	75	Sandstones
				Interval		Unconformity
		Early	*Zunian*	McElmo	300	Shales
				La Plata	300	Sandstones
	TRIASSIC	Late	*Doloresian*	Wingate	900	Sandstones
				Le Roux	800	Shales
				Shinarump	600	Conglomerate
		Mid		Interval		Unconformity
		Early	*Dockuman*	Trujillo	300	Shales
				Tecovas	200	Shales
				Interval		Unconformity
PALEOZOIC	CARBONIC	Late	*Cimarronian*	Quartermaster	150	Shales
				Greer	125	Shales
				Chaves	425	Shales
				Interval		Unconformity
			Guadaloupan	Capitan	2500	Limestones
				Eddy	1000	Sandstones
				Interval		Unconformity
		Mid	*Bernalillan*	Torrance	500	Shales
				Yeso	600	Shales
				Manzano	500	Sandstones
				Interval		Unconformity
			Maderan	Tellera	300	Limestones
				Gallegos	100	Sandstones
				Antonito	200	Limestones
			Lunasan	Mosca	200	Limestones
				Coyote	75	Sandstones
				Montosa	400	Limestones
				Sandia	250	Shales
				Interval		Unconformity
			Ladronesian	Alamito	200	Shales
		Early	*Tennessean*	Interval		Unconformity
			Mississippian	Modoc	200	Limestones
				Sierra	50	Limestones
				Lake Valley	150	Limestones
				Grande	25	Limestones
			Waverlyan	Interval		Unconformity
	DEVONIC	Late	*Martinian*	Berenda	50	Limestones
				Interval		Unconformity
		Mid	*Perchan*	Bella	250	Shales
				Silver	200	Shales
		Early		Interval		Unconformity
	SILURIC	Late				Wanting
		Mid	*Santa Ritan*	Naiad	250	Limestones
				Cibola	175	Limestones
		Early		Interval		Unconformity

ERAS	PERIODS	SUB-P.	SERIES	TERRANES	THICK	ROCKS
PALEOZOIC	ORDOVICIC	LATE	*Mimbresian*	Cristobal	165	Limestones
		MID	*Montoyan*	Frondosa	100	Limestones
		EARLY	*El Pasan*	Armendaris	300	Limestones
				Interval		Unconformity
	CAMBRIC	LATE	*Chiricahuan*	Lone	300	Quartzites
			Chloridian	Carrasco	75	Limestones
		MID	*Dragoonan*	Burro Hawkins Mangas	500 50 100	Quartzites Limestones Quartzites
		EARLY		Interval		Unconformity
PROTEROZOIC	SUPERIORIC		*Valencian*	Graphic Sandoval	1000	Lavas Granites
				Interval		Unconformity
	SELKIRKIC		*Albuquerquan*	Ysidro Tijeras	1500 250	Shales Quartzites
				Interval		Unconformity
			Garnuan	Antonio	2000	Slates
	ANIANIC			Interval		Unconformity
ARCHEOZOIC			*Pecurisan*	Truchas Penasco Serna	900 400 1500	Slates Quartzites Schists
				Interval		Unconformity
			Taosan	Solitario Rociada Sapello Ninos	800 250 300 1000	Slates Limestones Quartzites Schists
				Interval		Unconformity
AZOIC						Slates Gneisses Schists

NOMENCLATURE AND SYNONYMY.

Abo Sandstones, Lee. (Bull. U. S. Geol. Surv., No. 389, p. 12, 1909.) Term exact synonym of Manzano sandstones as defined by C. L. Herrick.

Alamito Shales, Keyes. (Journal of Geology, Vol. XIV, p. 154, 1906.) Probably representative of some part of the Arkansan coal series of the Mississippi valley.

Albuquerquan Series. The great sequence of argillaceous beds, with some quartzites, exposed to the extent of more than 2,000 feet in the Tijeras canyon, east of Albuquerque.

Antonio Slates. Thick, somewhat metamorphosed, argillaceous beds which lie beneath the Tijeras quartzite, and are well displayed at the north end of the Manzano mountains. They are underlain by other but as yet undetermined sediments.

Antonito Limestones. Lowermost of the heavy gray limestones exposed in fine sections at the southern extremity of the Sandia range.

Apishipa Shales, Gilbert. (Seventeenth Ann. Rept., U. S. Geol. Surv., Pt. ii, p. 567, 1896.)

Archuleta Shales. The title is here proposed for that of Animas Formation of the San Juan region, which is preoccupied.

Armendaris Limestones. Main body of the Early Ordovicic limestones well displayed in the Sierra de los Caballos.

Arriban Series, Keyes. (Proc. Iowa Acad. Sci., Vol. XIII, p. 226, 1908.) Essentially the entire Miocene section as represented around the southern end of the Rocky Mountains.

Aztecan Series. A thick, post-Laramian succession of Cretacic sediments in the San Juan region.

Bella Shales, Keyes. (Trans. American Inst. Mining Eng., Vol. XXXIX, p. 147, 1909.)

Berenda Limestones, Keyes. (Trans. American Inst. Mining Eng., Vol. XXXIX, p. 147, 1909.) Late Devonic section of the Mimbres region, which possibly represents the attenuated eastward extension of the thick Martinian limestones of eastern Arizona.

Bernalillan Series, Keyes. (Rept. Governor New Mexico to Secretary of Interior, for 1903, p. 341, 1904.) Term originally proposed for the Mid Carbonic red-beds below the Cimarronian series.

Bliss Quartzites, Richardson. (Bull. Texas Univ. Min. Surv. No. 9, 1904.) Basal member of the Mid Cambric section of the Franklin mountains; and the sole representative of the Dragoonan series of that area.

Burro Quartzites. Main body of the Mid Cambric quartzites which immediately overlie the Chloridian series of limestones near Silver City.

Canyon Largo Sandstones, Newberry. (Macomb's Exped. Green River, Geol. Rept. p. 1, 1876.)

Capitan Limestones, Richardson. (Bull. Texas Univ. Min. Surv., No. 9, 1904.)

Carrasco Limestones. Main calcareous member of Late Ordovicic age well displayed back of the Carrasco smelter property near Silver City.

Cenocene Series. Latest formed deposits of the Quaternaric age.

Chaco Clays, Keyes. (Proc. Iowa Acad. Sci., Vol. XIII, p. 225, 1908.) Main body of clays, shales and sands heretofore referred to the Wasatch sequence of the San Juan basin.

Chacra Sandstones. Massive sandstone layers forming the upper member of the Mesa Verde coal formation and constituting a prominent relief feature in the southeastern part of the San Juan region.

Chaquaqua Shales. Section of alternating red sandstones and shales, finely exposed in the Chaquaqua canyon, in northeast New Mexico.

Chaman Series, Keyes. (Proc. Iowa Acad. Sci., Vol. XIII, p. 224, 1908.) Main body of so-called Wasatch section, in the San Juan district.

Chaves Shales. Lowermost section of red shales which rest on the great Capitan limestones in the Guadaloupe mountains.

Chiricahuan Series. Late Cambric limestone succession well developed in the Chiricahua and Caballos ranges.

Chloridian Series. Mid Cambric limestone succession extensively exposed in Grant county; and probably the eastern attenuation of the Abrigo sequence of limestones of Bisbee.

Cibola Limestones. Important Mid Siluric limestone member outcropping at the Cibola mill at Silver City.

Cimarronian Series, Cragin. (Colorado College Studies, Vol. VI, p. 18, 1896.)

Coloradan Series, Endlich. (U. S. Geol. and Geog. Surv. Terr., Ninth Ann. Rept., p. 126, 1877.)

Comanchan Series, Hill. (Am. Jour. Sci. (3), Vol. XXXIII, p. 298, 1887.)

Coyote Sandstones, Herrick. (Bull. Hadley Lab. Univ. New Mexico, Vol. II, fascicle 3, p. 4, 1900.)

Cristobal Limestones. Main body of Late Ordovicic limestone section in the Franklin, Caballos, Fra Cristobal and Mimbres ranges.

Dakotan Series, Meek and Hayden. (Proc. Acad. Nat. Sci. Philadelphia, Vol. XIII, p. 410, 1862.)

Dragoonan Series, Dumble. (Trans. American Inst. Mining Eng., Vol. XXXI, p. 1902.) Mid Cambric section finely exposed in the vicinity of Silver City. Originally defined in the Dragoon range of southeastern Arizona.

Dockuman Series, Hill. (Texas Geol. Surv., First Ann. Rept., p. 189, 1890.)

Doloresan Series, Cross. (U. S. Geol. Surv., Folio 57, p. 2, 1899.)

Eddy Sandstones, Keyes. (Journal of Geology, Vol. XIV, p. 154, 1906.) The term Delaware proposed by G. B. Richardson for this formation is preoccupied.

El Pasan Series, Keyes. (Science, Vol. XXIII, p. 922, 1906.) Term is restricted to the Early Ordovicic section of the Franklin, Caballos and Mimbres ranges.

Epicene Series, Keyes. (Proc. Iowa Acad. Sci., Vol. XXI, p. 186, 1914.) Early, or pre-Glacial, section of the Quaternaric succession.

Exter Sandstones, Lee. (Journal of Geology, Vol. X, p. 45, 1902.)

Fredericksburg Limestones, White. (Proc. Acad. Nat. Sci., Philadelphia, 1887, p. 40, 1887.) Part of Cretacic section well exposed in the Sierra de los Muleros west of El Paso.

Frondosa Limestones. Main body of Mid Ordovicic series in Franklin mountains, which carries a Galena-Trenton fauna.

Fusselmann Limestones, Richardson. (Am. Jour. Sci. (4), Vol. XXV. p. 474, 1908.) Includes the entire Siluric section of the Franklin mountains.

Galisteo Sandstones, Hayden. (U. S. Geol. and Geog. Surv. Terr., Third Ann. Rept., p. 167, 1873.)

Gallegos Sandstones. Thick sandstone beds in the middle of the Maderan limestones in the Sandia range.

Gallina Shales. Basal member of the Coloradan series, well developed on Gallina Creek, near Las Vegas.

Garnuan Series. Thick argillaceous sequence which lies below the Tijeras quartzite in the Tijeras and Coyote canyons at the north end of the Manzana mountains. Still other sediments underlie it.

Garrett Conglomerate. ..Basal member of the Early Cretacic section in northeastern New Mexico and southwestern Kansas.

Gilan Series. Early Quaternaric section widely developed in the Gila River valley.

Glorietta Sandstones. Main body of the Dakotan series around the southern end of the Rocky mountains.

Grande Limestones, Keyes. (Trans. American Inst. Mining Eng., Vol. XXXIX, p. 148, 1909.) Formation is best shown at Lake Valley; and is perhaps the southwestern representative of the Chouteau limestone of the Mississippi valley.

Graphic Lavas. Bedded volcanic sequence superposed on pre-Cambric rocks of the Magdalena mountains.

Greer Shales, Gould. (Water Supply and Irrig. Pap., U. S. Geol. Surv., No. 148, p. 39, 1905.) Western extension of the Cimarronian red-beds of western Texas and Kansas.

Guadaloupan Series, Girty. (Am. Jour. Sci. (4), Vol. XIV, p. 363, 1902.)

Hawkins Limestones. Important calcareous beds of Mid Cambric age which are intercalated in the basal section of quartzites exposed in Grant county.

Houten Sandstones. Middle sandy portion of the Raton series in northeastern New Mexico.

Jornadan Series. Principal intermont plains soils and surface deposits.

Kelly Limestones, Herrick. (American Geologist, Vol. XXXIII, p. 310, 1904.) Synonymous with Lake Valley limestones.

Kiowa Shales, Cragin. (Colorado College Studies, Vol. V, p. 49, 1894.) Main body of Comanchan shales well exposed in northeastern New Mexico and southwestern Kansas.

Ladronesan Series, Keyes. (Journal of Geology, Vol. XIV, p. 154, 1906.) Remnant of coal-bearing formation which is to be correlated with the Arkansan series of the Mississippi valley.

La Jara Shales. Thick, uppermost black shales section of the Coloradan series around the southern end of the Rocky mountains.

Lake Valley Limestones, Keyes. (Rept. Governor of New Mexico to Secretary of Interior, for 1903, p. 341, 1904.) Main body of Early Carbonic section exposed typically at Lake Valley and elsewhere in the Mimbres region.

La Plata Sandstones, Cross and Spencer. (U. S. Geol. Surv., Folio 60, p. 3, 1889.)

Laramian Series, White. (Bull. U. S. Geol. and Geog. Surv. Terr., Vol. III, p. 625, 1877.)

Le Roux Shales, Ward. (Am. Jour. Sci. (4), Vol. XII, p. 401, 1901.)

Lewis Shales, Cross and Spencer. (U. S. Geol. Surv., Folio 60, p. 4, 1899.)

Llano Estacado Sands, Hill. (Bull. Geol. Soc. America, Vol. III, p. 87, 1892.) Mainly the Pliocene deposits of eastern New Mexico and western Texas.

Lone Quartzite. Late Cambric section of alternating quartzites and metamorphosed limestones well displayed in Lone mountain, near Silver City.

Lunasan Series. Main limestone sequence in the Manzano mountains.

Maderan Series, Keyes. (Rept. Governor of New Mexico to Secretary of Interior, for 1903, p. 341, 1904.) Uppermost gray limestone sequence below the red-beds in the Sandia mountains.

Magdalena Group, Gordon. (Journal of Geology, Vol. XV, p. 805, 1907.) Synonymous with Maderan and Lunasan series, little of either of which appear to be represented in the Magdalena range.

Mangas Quartzite. Basal silicious member of the Mid Cambric section exposed near Silver City.

Manzanan Series, Keyes. (Rept. Governor of New Mexico to Secretary of Interior, for 1903, p. 341, 1904.) Exact synonym of Lunasan series, which term is proposed for it.

Manzano Sandstone. Herrick. (Bull. Hadley Lab. Univ. New Mexico, Vol. II, Pt. i, fascicle 3, p. 4, 1900.) Title as originally used appears to have been restricted to the lowermost red sandstones to which W. T. Lee later gave the designation Abo sandstones.

Martinian Series, Ransome. (Prof. Pap. U. S. Geol. Surv., No. 21, p. 33, 1904.) Late Devonic limestone succession of Bisbee, Arizona, Silver City, and Lake Valley.

Maya Conglomerate. Basal member of the Tertiaric section in northeastern New Mexico.

McElmo Shales, Cross and Spencer. (U. S. Geol. Surv., Folio 60, p. 4, 1899.)

Mesa Verde Shales, Holmes. (U. S. Geol. and Geog. Surv. Terr., Ninth Ann. Rept., p. 245, 1877.)

Mimbresan Series, Keyes. (Rept. Governor of New Mexico to Secretary of Interior, for 1903, p. 341, 1904.) Term restricted to Late Ordovicic section in Mimbres, Caballos and Franklin ranges that carries the Richmond fauna.

Mississippian Series, Winchell. (Proc. American Philos. Soc., Vol. XI, p. 79, 1869.) Term again restricted to its original signification and to the middle part of the Early Carbonic succession.

Modoc Limestones, Lindgren. (Prof. Pap. U. S. Geol. Surv., No. 43, p. 69, 1905.) Part of the Early Carbonic section extending eastward to the Mimbres range from Clifton, Arizona.

Montanan Series, Eldridge. (Proc. Colorado Sci. Soc., Vol. III, p. 93, 1888.)

Montosa Limestones, Keyes. (Journal of Geology, Vol. XIV, p. 154, 1906.) One of the distinctive members of the Lunasan section of the Manzana and Sandia ranges.

Montoyan Series. Mid Ordovicic section of the Franklin, Caballos and Mimbres mountains.

Morrisonian Series, Cross. (U. S. Geol. Surv., Folio 7, p. 2, 1894.)

Mosca Limestones, Keyes. (Journal of Geology, Vol. XIV, p. 154, 1906.) Uppermost member, carrying a distinctive fauna, of the Lunasan series in the Manzano mountains.

Nacimientan Series, Keyes. (Proc. Iowa Acad. Sci., Vol. XIII, p. 224, 1908.) Includes the main body of Puerco marls of E. D. Cope, and other argillaceous beds.

Naiad Limestone. Main ore-bearing formation at Georgetown, Silver City and elsewhere in these districts.

Navajo Shales. Thick, upper member of the Laramian series in the San Juan region.

Ninos Schists. Lower and principal schistose section above the Azoic gneisses in Solitario mountain, northwest of Las Vegas.

Palomas Series, Gordon. (Prof. Pap. U. S. Geol. Surv., No. 68, p. 237, 1910.) Term restricted to the Mid Quaternaric, or Pleistocene, section.

Pecosan Series, Keyes. (Proc. Iowa Acad. Sci., Vol. XIII, p. 227, 1908.) Includes essentially all of the Pliocene section of the Llano Estacado region.

Penasco Quartzite. Main body of silicious section exposed near Pecuris, north of Santa Fe.

Perchan Series, Gordon. (Am. Jour. Sci. (4), Vol. XXIV, p. 58, 1907.)

Pictured Cliffs Sandstones, Holmes. (U. S. Geol. and Geog. Surv. Terr., Ninth Ann. Rept., p. 246, 1877.)

Picurisan Series. A thick section of highly tilted sediments of Archeozoic age widely exposed on the west side of the Rocky mountains north of Santa Fe. They strike northwest and southeast, and are best exposed near the village of Pecuris.

Pino Vititos Sandstones. Basal member of the Montanan coal-bearing series around the southern end of the Rocky mountains.

Pleistocene Series. Term here restricted to the Mid Quaternaric section.

Puerco Clays, Cope. (Rept. Secretary of War to Forty-fourth Cong., Vol. II, Pt. ii, p. 1012, 1875.)

Quartermaster Shales, Gould. (Water Supply and Irrig. Pap., U. S. Geol. Surv., No. 148, p. 39, 1905.)

Rociado Limestones. Main body of Archeozoic limestones in the Solitario Mountain district, northwest of Las Vegas.

Ratonan Series, Knowlton. (Am. Jour. Sci., (4), Vol. XXXV, p. 527, 1913.)

San Andreas Limestones, Lee. (Bull. U. S. Geol. Surv., No. 389, p. 9, 1907.) Upper part of Maderan series.

Sandia Shales, Herrick. (Journal of Geology, Vol. VIII, p. 115, 1900.)